State of Rhode Island and Providence Plantations

DEPARTMENT OF AGRICULTURE

Bureau of Forestry

Seedlings for Forest Planting

Information on forest nursery stock that may be ordered through the Bureau of Forestry, State Department of Agriculture.

Ten Year Old White Pine Plantation, Greene, R. I. In Foreground.

PLANTING IDLE LAND PAYS

WHY TO PLANT

There are thousands of acres of non-productive forest land in Rhode Island. These areas should be put into a state of productiveness through the planting of desirable forest tree species. Reforestation will increase land values as well as produce a future crop. A forest plantation fills in the waste spaces and helps out as part of the regular farm income. A stand of trees with continuous new growth is an accumulation of wealth. Forest planting is also desirable to increase our recreational forests, watersheds and game coverage.

WHAT TO PLANT

The species of tree to plant is often determined by knowing what grows naturally and successfully in a given locality. The trees of commercial importance in Rhode Island are the white pine, the red and white oak, the red maple and the hard pine. Several other species of trees are cut and contribute in a small way to the total output of wood products. Our valuable native hardwoods reproduce themselves by sprouts and seeds and restock their areas fairly readily under proper management. Therefore, the State Department of Agriculture especially encourages the planting of desirable softwoods. It believes that a mixed planting of white and red pine is generally preferable except on very sandy soils or when planted under shade. Red pine grows better than white pine on extremely sandy soil but it does not flourish when shaded by other trees.

The Department, however, recognizes that certain hardwoods may sometimes be planted to good advantage when production and marketing conditions are favorable to their growth. It is difficult at present to secure hardwood seedlings from nurseries. They have not been planted as extensively as the softwoods and their planting is in more of an experimental stage in this state. Persons desiring to plant hardwoods are requested to consult the Department on their individual problems and if possible

planting stock will be secured for them. The United States Department of Agriculture Bulletin 1123 "Growing and Planting Hardwood Seedlings On the Farm" is available in limited quantities at the State Department of Agriculture office and is a very good bulletin for the prospective hardwood planter's use.

The State Department of Agriculture recommends this list of trees for forest planting in Rhode Island as being most suitable to the forest conditions in the state.

NOTE: Transplants have better established root systems than seedlings. Their use is generally recommended, in planting under ordinary conditions. However, under favorable soil conditions and with proper care in planting, seedlings will give satisfactory results.

Species	*Advantages*	*Disadvantages*
White Pine	1. Rapid growth. 2. High timber value. 3. Wide range of use as timber. 4. Grows on all but very sandy soil. 5. Ease of management. 6. Seedlings tolerate partial shade. 7. Reproduces well.	1. Subject to white pine blister rust. 2. Subject to white pine weevil. 3. Not resistant to fire.
COMMENT:	White pine plantings for timber purposes should be encouraged, even taking into consideration the possibility of damage by the blister rust and the weevil. Blister rust can be controlled and weevil damage can be reduced by proper management. As this tree endures partial shade it is particularly adapted for planting in open brush growth to give a mixed stand of white pine and hardwood.	
Red Pine (Norway)	1. Rapid growth. 2. High timber value, but not as high as white pine. 3. Comparative freedom from pests and disease at present. 4. Ease of management. 5. Usually very wind firm.	1. Seedlings require direct sunlight. 2. Does not reproduce well under normal forest conditions.
COMMENT:	Red pine makes an excellent tree but should be planted preferably in a mixture with white pine when planted in the open. Red pine should not be planted under shade. This tree may be used when planting on very sandy or gravelly soils where it will grow much faster than white pine.	
Scotch Pine	1. Rapid growth during early years. 2. Resistance to fire. 3. Grows well on extremely sandy soil. 4. Ease of management.	1. Tendency to be crooked rather than to develop into a straight timber tree. 2. Timber value not as high as white pine.
COMMENT:	Scotch pine is a good species for reforesting worn out, dry and acid soils. Heavy ocean winds often blow the needles off Scotch pine. The needles on Austrian pine are more resistant to winds, and this tree is therefore recommended for wind-breaks on windy coastal sites where Scotch pine plantings prove unsuccessful.	
Norway Spruce	1. Rapid growth. 2. Wide use for timber, but especially adapted for pulp. 3. Good for Christmas tree use. 4. Tolerates some shade.	1. Very susceptible to spruce gall. 2. Subject to white pine weevil.

White Spruce	1. Good Christmas tree. 2. Well adapted for use as paper pulp. 3. Susceptible to spruce gall, but more resistant than Norway spruce.	1. Slightly slower growing than Norway spruce.

COMMENT: White spruce apparently is a safer tree to grow than Norway spruce on account of damage from gall.

WHEN TO PLANT

The proper time to plant forest seedlings is in early Spring after the frost has left the ground. Trees may be planted in the Fall but such fall-planted trees are often subject to winter killing and frost heaving.

HOW TO PLANT

The nursery stock should be planted as soon as possible after arrival. Heeling in the plants at about a 40 degree angle in a trench made in a cool and shady spot, leaning the tops of the trees towards the sun, with the root systems spread out rather thinly and covered with moist dirt will hold the trees over for a few days until planting can be done. In planting, the root systems should be kept in a pail of muddy water until placed in a hole large enough to accommodate the roots without cramping them. The tree should be set in the ground with the dirt level the same as when in the nursery or slightly lower. The soil should be well pressed around the roots by heel or hand and care should be taken in placing the plants in an upright position. Trees are generally planted five or six feet apart. Seedlings planted six feet apart will give about twelve hundred trees to the acre. Trees for Christmas tree use may be planted as close as three feet apart since they will be cut before reaching large size.

PROTECTION AND CARE

Protection from fire, insects and fungi is necessary. Control measures should be known and applied to safeguard the crop.

The most common forest enemies can be controlled as follows:

Susceptible Trees	*Enemy*	*Control Measures Necessary**
White Pine	White Pine Weevil	Early and periodic pruning of diseased branches. Close planting 5 feet by 5 feet. Plant under partial or light shade.
White Pine	White Pine Blister Rust.	Eradicate all currants and gooseberries within 900 feet of the pine area. Cultivated black currants have been declared a public nuisance in Rhode Island due to their prominence in spreading blister rust. Pull them up wherever growing.
Oaks	Gipsy Moth	Spray with arsenate of lead during the feeding season. Creosote egg clusters in winter.
Norway Spruce	Spruce Gall	Cut off and burn galls. Spray with lime sulphur at proper time.
All Trees	Fire	Place fire lanes around plantation at least 10 feet in width, clear of heavy vegetation. Close observance during dry seasons. Available equipment for fire-fighting—hand pumps, knapsack pumps, shovels, rakes, etc.

* Consult State Department of Agriculture for detailed directions.

Forest management will increase the yield and quality of the stand. Thinning and pruning the trees after they have gained the necessary growth will increase the value of the product.

When the trees reach an age of fifteen to twenty years they will usually crowd each other too severely. There is need at this time to make a thinning to cut out the dead and dying, diseased, inferior and weed trees. The trees cut should be used for cordwood, poles, or similar material to help pay for the cost of the thinning. The trees remaining will have more room, light and moisture and they will respond with increased growth. When thinnings are repeated several times during the life of the plantation, the final result is a stand of large trees of fine quality. In making thinnings the crown cover should not be opened to such an extent that much sunlight will strike the ground under the trees because this will dry out the soil, give rise to a growth of weeds and grass, and make conditions in general less favorable for the growth of the remaining trees.

Some trees do not shed dead limbs as quickly as others. Limbs cause knots and knotty lumber is less valuable than clear lumber. Trees of high commercial value if pruned of dead limbs early in life will often more than repay the owner for pruning. He may well utilize his spare time in sawing off the lower limbs as closely as possible to the trunk to a height of sixteen feet, to increase the value of the butt logs.

LEGAL PROVISIONS UNDER WHICH DEPARTMENT OF AGRICULTURE MAY ARRANGE FOR THE PURCHASE OF FOREST TREE SEEDLINGS

JANUARY SESSION, A. D. 1928

AN ACT IN AMENDMENT OF AND IN ADDITION TO CHAPTER 280 OF THE GENERAL LAWS, ENTITLED "OF THE BUREAU OF FORESTRY."

It is enacted by the General Assembly as follows:

SECTION 1. Chapter 280 of the general laws, entitled "Of the bureau of forestry," is hereby amended by adding thereto the following section:

"Sec. 5. For the purpose of encouraging reforestation the chief of the bureau of forestry is authorized and empowered to purchase, and resell at cost to the owners of any farm or woodlands in this state, tree seedlings to be planted on such farms or land; provided, however, that nothing in this section shall authorize said chief to incur any obligation for the payment of any sum by the state nor to charge any fee or profit for his services hereunder."

SEC. 2. This act shall take effect upon its passage.

RULES UNDER WHICH THE DEPARTMENT OF AGRICULTURE WILL ORDER FOREST TREE SEEDLINGS

1. The Department of Agriculture acts only as agent in pooling and placing orders. The Department will in no way enter into the financial transactions involved.
2. The Department of Agriculture accepts no responsibility for the delivery, planting or viability of trees purchased under this plan.
3. The Department of Agriculture after securing competitive bids, pools orders and places them with responsible nurseries, same to be delivered by said nursery to individual purchasers and billed directly to them.
4. Orders will be received only on official order blanks provided by the Department of Agriculture.
5. Trees purchased under this plan are to be used only for forest planting.
6. Orders must be received by the Department of Agriculture before April 20 for spring planting.

More detailed information on forest planting, protection or woodlot management may be obtained from the State Department of Agriculture or the State Extension Service.

Issued by State Department of Agriculture.

HARRY R. LEWIS, *Commissioner*.

November 28, 1928.